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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,291	12/18/2001	Rene Demellayer	13188	4066

466 7590 07/31/2003

YOUNG & THOMPSON  
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ARLINGTON, VA 22202

EXAMINER
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WILKINS III, HARRY D

ART UNIT	PAPER NUMBER
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1742

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DATE MAILED: 07/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)	
10/017,291	DEMELLAYER, RENE	
Examiner	Art Unit	
Harry D Wilkins, III	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.
- 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frei (CH 670785) in view of Applicant's admission of prior art and further in view of Barmatz et al (US 4,523,682).

Frei teaches (see abstract and figure 5) an electro-erosion machine (44) with an electrode (44) and a piece (42) where the machining liquid (43) is made of a dielectric liquid containing particles which facilitate electro-erosion. Frei teaches (see partial translation submitted by Applicant) that there are means (30) for cleaning and regenerating the machining liquid.

Frei does not teach that there was a second-type of particles in the liquid as contamination and that the contaminant particles were separated from the machining liquid by means of an ultrasonic decantation device.

Applicant admits as prior art (see page 1, lines 17-25) that the machining liquid of the prior art apparatus of Frei was contaminated by particles of metallic spherules of the material of the piece and of the electrode, as claimed. The contamination particles (as described by Applicant at page 5, lines 13-17) have a higher density than the first

Art Unit: 1742

particles. Applicant's admission also describes that the major problem was in properly filtrating and purifying the machining liquid.

Therefore, the contaminated machining liquid of Frei contains the second particles as claimed.

Barmatz et al teach (see abstract and figures 1 and 2) a device for separating particulate materials of differing sizes/densities suspended in a fluid by means of an ultrasonic sound. The device includes a receptacle (14) with an ultrasonic emission member (30) connected to a generator (28), which can be adjusted so that the second particles decant (i.e.-like particles 56) while the first particles remain in suspension (i.e.-like particles 50, 52 or 54).

Therefore, it would have been obvious to one of ordinary skill in the art to have applied the device of Barmatz et al for the separation means of Frei because the device of Barmatz et al can easily provide an excellent separation of the two particles present in the machining liquid of Frei.

Regarding claim 2, Frei teaches (see figure 5) that there are supply means for supplying contaminated machining liquid into the filtration module (30) and at least one opening for discharging the purified machining liquid.

Regarding claim 3, Applicant admits as prior art (see page 1, lines 21-25) that when the dielectric liquid is carbonated, there exist third particles of colloidal carbon. It would have been obvious to one of ordinary skill in the art to have added a second separation device of Barmatz et al to separate the first particles from the third particles to purify the machining liquid even further. Since the device of Barmatz et al separates

by decanting the heaviest/densest particles, the first particles, which were denser than the colloidal carbon would be decanted as claimed. Since this second device would be placed in line after the first device, its inlet would be connected to the outlet of the first device.

Regarding claim 4, the outlet of the second device would contain the dielectric liquid and the colloidal carbon particles. The colloidal carbon would be removed by any conventional means, such as by filtering, as admitted by Applicant at page 2, lines 1-9. Barmatz et al teach (see col. 3, lines 37-39) that the large particles that decant to the bottom of the chamber can be removed from the bottom of the chamber. Since these are the particles that are desired to be recycled (the additive to enhance electro-erosion), it would have been obvious to one of ordinary skill in the art to have extracted these particles from the second device and transported them to the filtered dielectric liquid in a conventional mixing receptacle to obtain a purified recyclable dielectric liquid with the additive first particles.

Regarding claim 6, the power consumption of the two ultrasonic generators, when optimized for decanting the second particles in the first device and the first particles in the second device, would have been expected to fall within the claimed ranges.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frei (CH 670785) in view of Applicant's admission of prior art and further in view of Barmatz et al (US 4,523,682) as applied to claims 1-4 and 6 above, and further in view of Lee (US 4,701,260).

Frei in view of Applicant's admission of prior art and Barmatz et al do not teach the extraction and transport means as claimed.

Lee et al teach (see abstract and figure 1) convention means for the extraction and transport of particulates from a liquid suspension that included a conveyor belt arranged at the bottom of the vat and extending out to dump the particulate into a second container.


Therefore, it would have been obvious to one of ordinary skill in the art to have used the conventional extraction and transport means of Lee in the process of Frei in view of Applicant's admission and Barmatz et al to remove the first particles from the second device because the means of Lee provide (see col. 1, lines 44-47) efficient removal and drying of the particulate on the bottom of the vessel.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D Wilkins, III whose telephone number is 703-305-9927. The examiner can normally be reached on M-Th 10:00am-8:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V King can be reached on 703-308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

ROY KING   
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700

Application/Control Number: 10/017,291  
Art Unit: 1742

Page 6

Harry D Wilkins, III  
Examiner  
Art Unit 1742

hdw  
July 28, 2003